

A NEW SPECIES OF *CTENOIDES* FROM THE CENTRAL ATLANTIC (BIVALVIA: LIMIDAE).

Una nueva especie de *Ctenoides* del Atlántico Central (Bivalvia: Limidae).

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ABSTRACT

Ctenoides sanctipauli new species is described from the Tropical Atlantic. The shell features relate it to a "group" of species" recorded from the Indo-Pacific and South Africa, adapted to sublittoral and archibenthal depths.

RESUMEN

Ctenoides sanctipauli nueva especie, es descrita del Atlántico Tropical. Sus características morfológicas permiten incluirla en un "grupo de especies" sublitorales y arquibentales caracterizables por una concha recta, casi orbicular, tan larga como alta u oval redondeada; equilateral o algo inequilateral; con estrías concéntricas fuertes o casi inconspicuas y costillas escamosas, por lo general moniliformes.

Keywords: Mollusca. Bivalvia. Limidae. Marine Biology. Taxonomy. Central Atlantic.

GENERAL REMARKS

There are about 14 species of the "file shells" genus *Ctenoides* described from different parts of the world but mostly from the Western Pacific. Comparatively, there are few species described for the Western Atlantic and none for the European Atlantic, the Mediterranean and the Eastern Pacific. This is not due to lack of collecting. As discussed by Stuardo (1968), no species have been found outside areas considered typically tropical and these sharp distributional boundaries suggest a strong stenothermy. Thus, their absence in the Mediterranean Sea, in spite of a well documented and abundant fossil record and the semi-tropical conditions presently prevailing, must be due to extinction as a consequence of the drastic cooling during the Pleistocene. Regarding the Eastern Pacific their absence or extinction is probably due to the combined effects of Tertiary historical events and Pleistocene climatic changes with similar outcomes to those discussed by Dana (1975) for hermatypic corals.

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Some clearly differentiated morphological groups of species (trends) can be recognized within the genus *Ctenoides*. One of these, represented by medium sized, equilateral or slightly inequilateral shells, includes *Ctenoides philippinarum* Masahito and Habe, 1978 from Pan Lao, Bahol, Philippines, *C. concentrica* Sowerby, 1888 from Hong Kong and Japan and *C. symmetrica* (Barnard, 1964) known only from off Cape Vidal, S. Africa. Several samples from the Central Atlantic and the Straits of Florida referable to this group are here proposed as a new species.

Ctenoides sanctipauli spec. nov.

Fig. 1

MATERIAL

- a) 6 broken shells and 9, somewhat eroded, taken between 60 and 80 fathoms (109–146 m), station 15, Chain 35, S. W. Saddle, St. Paul's Rocks, Atlantic Ocean (Museum of Comparative Zoology, Harvard, MCZ N^o 261389);
- b) 4 small valves from off Havana, Cuba in 127 fathoms (232.4 m) "Blake". Originally determined as *Lima tenera* Dall. (Museum of Comparative Zoology, Harvard, MCZ N^o 7823 a);
- c) 1 specimen taken at Eolis Sta. 37, Sand Key Reef, Florida, U. S. A.; shore station among coral blocks, at low tide (National Museum of Natural History, Wash., USNM N^o 458136).

DESCRIPTION

Shell moderately large (about 40 mm high), thin, fragile, not gaping except for the byssal aperture and a short and narrow anal gap. Equivalve and inequilateral as most species of the genus. Ovate, rather flat. With a dull whitish coloration but apparently covered by a thin periostracum of a pale yellowish brown coloration.

Hinge line straight, moderately long. Cardinal area broadly triangular but low and long with lateral teeth at the extremities. Ligamental pit small, about one fourth of the hinge length; central and very slightly oblique. Auricles almost equal, the anterior shorter with finely sculptured ribblets. Beaks central, obliquely projected over the cardinal area. Margins evenly ovate; anterior slightly oblique, posterior sloping upwards gently towards the auricle. Ventral margin smooth, not denticulate.

Sculpture formed by thin flat ribs, closely interspaced (100 to 120 in larger shells); almost obsolete on the umbones, becoming coarser towards the margins. Ribs regularly, obliquely divided by sharp scales projecting towards the divaricating middle line. Concentric, very fine lines visible only in patches although the arrangement of the pointed extremes of the scales gives the impression of a concentric striation. Major concentric zones of growth present.

Anterior adductor scar about one third to one fourth of the height of the shell.

Shell interior white, polished, translucent.

Soft parts unknown.

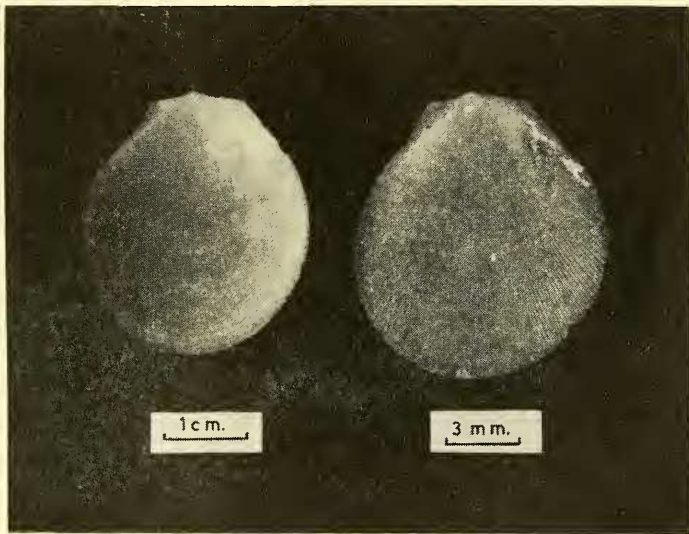


Fig. 1.- *Ctenoides sanctipauli* Stuardo, *spec. nov.*

Left: Holotype. S. W. Saddle, St. Paul's Rocks, Central Atlantic, Station 15, Chain 35; 60 to 80 fathoms (MCZ 261389). 32.4 mm.

Right: Paratype. Off Havana, Cuba. "Blake"; 127 fathoms (MCZ 7823a) 12.3 mm.

HOLOTYPE:

Height 32.4; length 28.5; Auricles 11.8 mm; Fosa 2.4 mm; with about 97 ribs. (MCZ).

KNOWN RANGE:

Central Atlantic to the Straits of Florida. Depth recorded: 60 to 127 fathoms (109-232,5 m).

MEASUREMENTS OF THE TYPE SERIES (mm).

SAMPLE	Height	Length	Auricles	Fosa	Byssal Notch	Ribs
MCZ 261389 valves	32.4	28.5	11.8	2.4	9.2	ca. 97 Holotype
	33.7	28.5	12.3	3.0	9.6	ca. 110 Paratype
	33.2	28.6	11.4	2.8	9.0	ca. 115 "
	33.7	29	13.4	3.7	10.3	ca. 100 "
	30.5	26.4	11.4	2.8	8.4	ca. 121 "
	22.8	20.3	7.8	1.5	7.8	ca. 96 "
	37.8	32.8	16.8	—	9.2	ca. 130 "
	34.1	29.6	12.6	2.9	10.5	ca. 141 "
	13.4	12.6	5.1	—	4.2	ca. 83 "
MCZ 7823a small valves	12.3	10.5	—			"
	9.4	8.2				"
USNM 458136 specimen	33	29.6	14			

DISCUSSION

The indication of "shore" in the record from South Florida seems doubtful. Among many samples of Limidae from that area examined by the author no other sample of this species was found. The valves of the specimen examined are too well preserved to have been cast off ashore. It was probably collected at greater depth.

The new species can be easily differentiated from the closely resembling *C. philippinarum* and *C. concentrica*. It is higher and less oblique than the former and more flattened than *C. concentrica*. The byssal aperture is also longer than in the two Indo-Pacific species. *C. symmetrica* is more equilateral.

The combined shell features of these 3 species and *C. atlantica* allows the following diagnosis for this "group": "Shell straight, quasi-orbicular, about as high as long or oval-rounded. Equilateral or inequilateral. With strong or inconspicuous concentric striae and scaled ribs, usually moniliform. Sublittoral or archibenthal species".

In general, the morphological features of this "group" indicate adaptation to soft bottoms and possibly a different branch of radiation within the genus.

Unfortunately, I have not been able to study the soft parts of this species and draw conclusions on functional and adaptive anatomical features. However, the expansion of the body is notorious, suggesting that the enlargement of the mantle cavity, pallial curtains and gills - being related to archibenthal habits and swimming - might result in a higher efficiency in cleansing mechanisms and, as Yonge (1936) has suggested, possibly, modification of the ciliary mechanisms.

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REFERENCES

- Barnard, K. H., 1964. Contributions to the knowledge of South African Marine Mollusca. Part V. Lamellibranchiata. Ann. S. Afr. Mus., 47 Part III: 361-393, 39 text-figs.
- DANA, T. F., 1975. Development of contemporary Eastern Pacific coral reefs. Marine Biology, 33 (4): 355-374.
- Masahito, Prince and T. Habe, 1978. New species of the genus *Ctenoides* from the Philippines (Limidae, Bivalvia). Venus, 36(4): 171-172.
- Sowerby, G. B., 1888. Descriptions of sixteen new species of shells. Proc. Zool. Soc. London: 207-213, pl. 11.
- Stuardo, J., 1968. On the phylogeny, taxonomy and distribution of the Limidae (Mollusca: Bivalvia) Ph. D. Thesis, Harvard University. 327 pp., 26 plates, 44 figs., 24 maps.
- Yonge, C. M., 1936. The evolution of the swimming habit in the Lamellibranchia, In: Mélanges Paul Pelseneer, Mem. Mus. Roy. Hist. nat. Belg. (2) Fasc. 3: 77-100, 10 figs.